SEQUENCE LISTING

<110> Davis, Ronald W.

     Vaillancourt, Peter

<120> Dimeric Fluorescent Polypeptides

<130> 25436/1652

<140> US 10/021,818

<141> 2001-12-13

<150> US 60/256,121

<151> 2000-12-15

<160> 72

<170> PatentIn version 3.1

<210> 1

<211> 720

<212> DNA

<213> Renilla reniformis

<400> 1

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aatctggaag gtgtagtaaa caatcatgtg ttcacaatgg aaggttgtgg aaaaggaaat     120

attttattcg gaaaccaact ggttcagatt cgtgtcacaa aaggggtccc gcttccattt     180

gcatttgata ttctctcacc agctttccaa tacggcaacc gtacattcac gaaatacccg     240

gaggatatat cagacttttt tatacaatca tttccagcgg gatttgtata cgaaagaacg     300

ttgcgttacg aagatggtgg actggttgaa atccgttcag atataaattt aatcgaggag     360

atgtttgtct acagagtgga atataaaggt agtaacttcc cgaatgatgg tccagtgatg     420
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aagaagacaa tcacaggatt acaaccttcg ttcgaagttg tgtatatgaa cgatggcgtc    480

ttggttggcc aagtcattct tgtttataga ttaaactctg gcaaatttta ttcgtgtcac    540

atgagaacac tgatgaaatc aaagggtgta gtgaaggatt ttcccgaata ccatttcatt    600

caacatcgtt tagagaagac tgatgtggaa gacggaggtt ttgttgagca acacgagacg    660

gccattgctc aactgacatc gctggggaaa ccacttggat ccttacacga atgggtttaa    720
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<210> 2

<211> 238

<212> PRT

<213> Renilla reniformis

<400> 2

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Met Ser Lys Gln Ile Leu Lys Asn Thr Gly Leu Gln Glu Ile Met Ser
1               5                   10                  15


Phe Lys Val Asn Leu Glu Gly Val Val Asn Asn His Val Phe Thr Met
                20                  25                  30


Glu Gly Cys Gly Lys Gly Asn Ile Leu Phe Gly Asn Gln Leu Val Gln
            35                  40                  45


Ile Arg Val Thr Lys Gly Val Pro Leu Pro Phe Ala Phe Asp Ile Leu
        50                  55                  60


Ser Pro Ala Phe Gln Tyr Gly Asn Arg Thr Phe Thr Lys Tyr Pro Glu
65                  70                  75                  80


Asp Ile Ser Asp Phe Phe Ile Gln Ser Phe Pro Ala Gly Phe Val Tyr
                85                  90                  95


Glu Arg Thr Leu Arg Tyr Glu Asp Gly Gly Leu Val Glu Ile Arg Ser
                100                 105                 110


Asp Ile Asn Leu Ile Glu Glu Met Phe Val Tyr Arg Val Glu Tyr Lys
            115                 120                 125


Gly Ser Asn Phe Pro Asn Asp Gly Pro Val Met Lys Lys Thr Ile Thr
        130                 135                 140


Gly Leu Gln Pro Ser Phe Glu Val Val Tyr Met Asn Asp Gly Val Leu
145                 150                 155                 160
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Val Gly Gln Val Ile Leu Val Tyr Arg Leu Asn Ser Gly Lys Phe Tyr
              165                 170                 175


Ser Cys His Met Arg Thr Leu Met Lys Ser Lys Gly Val Val Lys Asp
              180                 185                 190


Phe Pro Glu Tyr His Phe Ile Gln His Arg Leu Glu Lys Thr Asp Val
              195                 200                 205


Glu Asp Gly Gly Phe Val Glu Gln His Glu Thr Ala Ile Ala Gln Leu
    210                 215                 220


Thr Ser Leu Gly Lys Pro Leu Gly Ser Leu His Glu Trp Val
225                 230                 235
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<210> 3

<211> 720

<212> DNA

<213> Artificial sequence

<220>

<223> R. reniformis GFP polynucleotide sequence adapted to humanize cod
       on usage

<400> 3

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aacctggagg gcatcgtgaa caaccacgtg ttcaccatgg agggctgcgg caagggcaac     120

atcctgttcg gcaaccagct ggtgcagatc cgcgtgacca agggcgcccc cctgcccttc     180

gccttcgaca tcgtgagccc cgccttccag tacggcaacc gcaccttcac caagtacccc     240

aacgacatca gcgactactt catccagagc ttccccgccg gcttcatgta cgagcgcacc     300

ctgcgctacg aggacggcgg cctggtggag atccgcagcg acatcaacct gatcgaggac     360

aagttcgtgt accgcgtgga gtacaagggc agcaacttcc ccgacgacgg ccccgtgatg     420

cagaagacca tcctgggcat cgagcccagc ttcgaggcca tgtacatgaa caacggcgtg     480

ctggtgggcg aggtgatcct ggtgtacaag ctgaacagcg gcaagtacta cagctgccac     540

atgaagaccc tgatgaagag caagggcgtg gtgaaggagt tcccctccta ccacttcatc     600

cagcaccgcc tggagaagac ctacgtggag gacggcggct cgtggagca gcacgagacc     660

gccatcgccc agatgaccag catcggcaag cccctgggca gcctgcacga gtgggtgtaa     720
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<210> 4

<211> 239

<212> PRT

<213> Artificial sequence

<220>

<223> Sequence of R. reniformis GFP polypeptide encoded by humanized R.
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<400> 4

Met Val Ser Lys Gln Ile Leu Lys Asn Thr Gly Leu Gln Glu Ile Met
1   5   10   15

Ser Phe Lys Val Asn Leu Glu Gly Val Val Asn Asn His Val Phe Thr
                20   25   30

Met Glu Gly Cys Gly Lys Gly Asn Ile Leu Phe Gly Asn Gln Leu Val
            35   40   45

Gln Ile Arg Val Thr Lys Gly Ala Pro Leu Pro Phe Ala Phe Asp Ile
    50   55   60

Leu Ser Pro Ala Phe Gln Tyr Gly Asn Arg Thr Phe Thr Lys Tyr Pro
65   70   75   80

Glu Asp Ile Ser Asp Phe Phe Ile Gln Ser Phe Pro Ala Gly Phe Val
                85   90   95

Thr Glu Arg Thr Leu Arg Tyr Glu Asp Gly Gly Leu Val Glu Ile Arg
                100   105   110

Ser Asp Ile Asn Leu Ile Glu Glu Met Phe Val Tyr Arg Val Glu Tyr
            115   120   125

Lys Gly Ser Asn Phe Pro Asn Asp Gly Pro Val Met Lys Lys Thr Ile
    130   135   140

Thr Gly Leu Gln Pro Ser Phe Glu Val Val Tyr Met Asn Asp Gly Val
145   150   155   160

Leu Val Gly Gln Val Ile Leu Val Tyr Arg Leu Asn Ser Gly Lys Phe
                165   170   175

Tyr Ser Cys His Met Arg Thr Leu Met Lys Ser Lys Gly Val Val Lys
            180   185   190

Asp Phe Pro Glu Tyr His Phe Ile Gln His Arg Leu Glu Lys Thr Tyr
     195   200   205

Val Glu Asp Gly Gly Phe Val Glu Gln His Glu Thr Ala Ile Ala Gln
    210   215   220

Leu Thr Ser Leu Gly Lys Pro Leu Gly Ser Leu His Glu Trp Val
225   230   235

<210> 5

<211> 10

<212> PRT

<213> Artificial sequence

<220>

<223> Synthetic peptide linker sequnce

<400> 5

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser
1   5   10

<210> 6

<211> 15

<212> PRT

<213> Artificial sequence

<220>

<223> Synthetic linker peptide

<400> 6

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser
1   5   10   15

<210> 7

<211> 20

<212> PRT

<213> Artificial sequence

<220>

<223>   Synthetic linker peptide

<400>   7

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly
1   5   10   15

Gly Gly Gly Ser
            20

<210>   8

<211>   11

<212>   PRT

<213>   Artificial sequence

<220>

<223>   Synthetic linker peptide

<400>   8

Arg Ala Arg Asp Pro Arg Val Pro Val Ala Thr
1   5   10

<210>   9

<211>   2

<212>   PRT

<213>   Artificial Sequence

<220>

<223>   synthetic linker peptide

<400>   9

Gly Ser
1

<210>   10

<211>   4

<212>   PRT

<213>   Artificial Sequence

<220>

<223> Synthetic linker peptide

<400> 10

Gly Ser Gly Ser
1

<210> 11

<211> 6

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic linker peptide

<400> 11

Gly Ser Gly Ser Gly Ser
1   5

<210> 12

<211> 8

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic linker peptide

<400> 12

Gly Ser Gly Ser Gly Ser Gly Ser
1   5

<210> 13

<211> 10

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic linker peptide

<400> 13

Gly Ser Gly Ser Gly Ser Gly Ser Gly Ser
1   5   10

<210> 14

<211> 12

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic linker peptide

<400> 14

Gly Ser Gly Ser Gly Ser Gly Ser Gly Ser Gly Ser
1   5   10

<210> 15

<211> 14

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic linker peptide

<400> 15

Gly Ser Gly Ser Gly Ser Gly Ser Gly Ser Gly Ser Gly Ser
1   5   10

<210> 16

<211> 16

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic linker peptide

<400> 16

Gly Ser Gly Ser Gly Ser Gly Ser Gly Ser Gly Ser Gly Ser Gly Ser
1   5   10   15

<210>   17

<211>   18

<212>   PRT

<213>   Artificial Sequence

<220>

<223>   Synthetic linker peptide

<400>   17

Gly Ser Gly Ser Gly Ser Gly Ser Gly Ser Gly Ser Gly Ser Gly Ser
1   5   10   15

Gly Ser

<210>   18

<211>   20

<212>   PRT

<213>   Artificial Sequence

<220>

<223>   Synthetic linker peptide

<400>   18

Gly Ser Gly Ser Gly Ser Gly Ser Gly Ser Gly Ser Gly Ser Gly Ser
1   5   10   15

Gly Ser Gly Ser
            20

<210>   19

<211>   22

<212>   PRT

<213>   Artificial Sequence

<220>

<223> Synthetic linker peptide

<400> 19

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Gly Ser Gly Ser Gly Ser Gly Ser Gly Ser Gly Ser Gly Ser Gly Ser
1               5                   10                  15


Gly Ser Gly Ser Gly Ser
            20
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<210> 20

<211> 24

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic linker peptide

<400> 20

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Gly Ser Gly Ser Gly Ser Gly Ser Gly Ser Gly Ser Gly Ser Gly Ser
1               5                   10                  15


Gly Ser Gly Ser Gly Ser Gly Ser
            20
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<210> 21

<211> 26

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic linker peptide

<400> 21

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Gly Ser Gly Ser Gly Ser Gly Ser Gly Ser Gly Ser Gly Ser Gly Ser
1               5                   10                  15


Gly Ser Gly Ser Gly Ser Gly Ser Gly Ser
            20                  25
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<210> 22

<211> 28

<212> PRT

<213> Artificial sequence

<220>

<223> Synthetic linker peptide

<400> 22

Gly Ser Gly Ser Gly Ser Gly Ser Gly Ser Gly Ser Gly Ser Gly Ser
1   5   10   15

Gly Ser Gly Ser Gly Ser Gly Ser Gly Ser Gly Ser
            20   25

<210> 23

<211> 30

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic linker peptide

<400> 23

Gly Ser Gly Ser Gly Ser Gly Ser Gly Ser Gly Ser Gly Ser Gly Ser
1   5   10   15

Gly Ser Gly Ser Gly Ser Gly Ser Gly Ser Gly Ser Gly Ser
            20   25   30

<210> 24

<211> 3

<212> PRT

<213> Artificial sequence

<220>

<223> Synthetic linker peptide

<400> 24

Thr Ser Pro

<210> 25

<211> 6

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic linker peptide

<400> 25

Thr Ser Pro Thr Ser Pro
1   5

<210> 26

<211> 9

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic linker peptide

<400> 26

Thr Ser Pro Thr Ser Pro Thr Ser Pro
1   5

<210> 27

<211> 12

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic linker peptide

<400> 27

Thr Ser Pro Thr Ser Pro Thr Ser Pro Thr Ser Pro
1   5   10

<210> 28

<211> 15

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic linker peptide

<400> 28

Thr Ser Pro Thr Ser Pro Thr Ser Pro Thr Ser Pro Thr Ser Pro
1   5   10   15

<210> 29

<211> 18

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic linker peptide

<400> 29

Thr Ser Pro Thr Ser Pro Thr Ser Pro Thr Ser Pro Thr Ser Pro Thr
1   5   10   15

Ser Pro

<210> 30

<211> 21

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic linker peptide

<400> 30

Thr Ser Pro Thr Ser Pro Thr Ser Pro Thr Ser Pro Thr Ser Pro Thr
1   5   10   15

Ser Pro Thr Ser Pro
            20

<210> 31

<211> 24

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic linker peptide

<400> 31

Thr Ser Pro Thr Ser Pro Thr Ser Pro Thr Ser Pro Thr Ser Pro Thr
1   5   10   15

Ser Pro Thr Ser Pro Thr Ser Pro
            20

<210> 32

<211> 27

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic linker peptide

<400> 32

Thr Ser Pro Thr Ser Pro Thr Ser Pro Thr Ser Pro Thr Ser Pro Thr
1   5   10   15

Ser Pro Thr Ser Pro Thr Ser Pro Thr Ser Pro
            20   25

<210> 33

<211> 30

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic linker peptide

<400> 33

Thr Ser Pro Thr Ser Pro Thr Ser Pro Thr Ser Pro Thr Ser Pro Thr
1   5   10   15

Ser Pro Thr Ser Pro Thr Ser Pro Thr Ser Pro Thr Ser Pro
            20   25   30

<210> 34

<211> 33

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic linker peptide

<400> 34

Thr Ser Pro Thr Ser Pro Thr Ser Pro Thr Ser Pro Thr Ser Pro Thr
1   5   10   15

Ser Pro Thr Ser Pro Thr Ser Pro Thr Ser Pro Thr Ser Pro Thr Ser
            20   25   30

Pro

<210> 35

<211> 36

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic linker peptide

<400> 35

Thr Ser Pro Thr Ser Pro Thr Ser Pro Thr Ser Pro Thr Ser Pro Thr
1   5   10   15

Ser Pro Thr Ser Pro Thr Ser Pro Thr Ser Pro Thr Ser Pro Thr Ser

                        20   25   30

Pro Thr Ser Pro
        35

<210> 36

<211> 39

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic linker peptide

<400> 36

Thr Ser Pro Thr Ser Pro Thr Ser Pro Thr Ser Pro Thr Ser Pro Thr
1   5   10   15

Ser Pro Thr Ser Pro Thr Ser Pro Thr Ser Pro Thr Ser Pro Thr Ser
                20   25   30

Pro Thr Ser Pro Thr Ser Pro
        35

<210> 37

<211> 42

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic linker peptide

<400> 37

Thr Ser Pro Thr Ser Pro Thr Ser Pro Thr Ser Pro Thr Ser Pro Thr
1   5   10   15

Ser Pro Thr Ser Pro Thr Ser Pro Thr Ser Pro Thr Ser Pro Thr Ser
                20   25   30

Pro Thr Ser Pro Thr Ser Pro Thr Ser Pro
        35   40

<210> 38

<211> 45

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic linker peptide

<400> 38

Thr Ser Pro Thr Ser Pro Thr Ser Pro Thr Ser Pro Thr Ser Pro Thr
1   5   10   15

Ser Pro Thr Ser Pro Thr Ser Pro Thr Ser Pro Thr Ser Pro Thr Ser
            20   25   30

Pro Thr Ser Pro Thr Ser Pro Thr Ser Pro Thr Ser Pro
        35   40   45

<210> 39

<211> 3

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic linker peptide

<400> 39

Gly Gly Gly
1

<210> 40

<211> 6

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic linker peptide

<400> 40

Gly Gly Gly Gly Gly Gly
1   5

<210>   41

<211>   9

<212>   PRT

<213>   Artificial Sequence

<220>

<223>   Synthetic linker peptide

<400>   41

Gly Gly Gly Gly Gly Gly Gly Gly Gly
1   5

<210>   42

<211>   12

<212>   PRT

<213>   Artificial Sequence

<220>

<223>   Synthetic linker peptide

<400>   42

Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly
1   5   10

<210>   43

<211>   15

<212>   PRT

<213>   Artificial Sequence

<220>

<223>   Synthetic linker peptide

<400>   43

Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly
1   5   10   15

<210> 44

<211> 18

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic linker peptide

<400> 44

Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly
1   5   10   15

Gly Gly

<210> 45

<211> 21

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic linker peptide

<400> 45

Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly
1   5   10   15

Gly Gly Gly Gly Gly
            20

<210> 46

<211> 24

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic linker peptide

<400> 46

Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly
1   5   10   15

Gly Gly Gly Gly Gly Gly Gly Gly
            20

<210> 47

<211> 27

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic linker peptide

<400> 47

Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly
1   5   10   15

Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly
            20   25

<210> 48

<211> 30

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic linker peptide

<400> 48

Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly
1   5   10   15

Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly
            20   25   30

<210> 49

<211> 33

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic linker peptide

<400> 49

Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly
1   5   10   15

Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly
            20   25   30

Gly

<210> 50

<211> 36

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic linker peptide

<400> 50

Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly
1   5   10   15

Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly
            20   25   30

Gly Gly Gly Gly
        35

<210> 51

<211> 39

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic linker peptide

<400> 51

Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly
1   5   10   15

Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly
                20   25   30

Gly Gly Gly Gly Gly Gly Gly
        35

<210> 52

<211> 42

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic linker peptide

<400> 52

Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly
1   5   10   15

Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly
                20   25   30

Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly
        35   40

<210> 53

<211> 45

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic linker peptide

<400> 53

Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly
1   5   10   15

Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly
         20   25   30

Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly
         35   40   45

<210> 54.

<211> 2

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic linker peptide

<400> 54

Glu Lys
1

<210> 55

<211> 4

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic linker peptide

<400> 55

Glu Lys Glu Lys
1

<210> 56

<211> 6

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic linker peptide

<400> 56

Glu Lys Glu Lys Glu Lys
1   5

<210> 57

<211> 8

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic linker peptide

<400> 57

Glu Lys Glu Lys Glu Lys Glu Lys
1   5

<210> 58

<211> 10

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic linker peptide

<400> 58

Glu Lys Glu Lys Glu Lys Glu Lys Glu Lys
1   5   10

<210> 59

<211> 12

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic linker peptide

<400> 59

Glu Lys Glu Lys Glu Lys Glu Lys Glu Lys Glu Lys
1   5   10

<210> 60

<211> 14

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic linker peptide

<400> 60

Glu Lys Glu Lys Glu Lys Glu Lys Glu Lys Glu Lys Glu Lys
1   5   10

<210> 61

<211> 16

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic linker peptide

<400> 61

Glu Lys Glu Lys Glu Lys Glu Lys Glu Lys Glu Lys Glu Lys Glu Lys
1   5   10   15

<210> 62

<211> 18

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic linker peptide

<400> 62

Glu Lys Glu Lys Glu Lys Glu Lys Glu Lys Glu Lys Glu Lys Glu Lys
1   5   10   15

Glu Lys

<210> 63

<211> 20

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic linker peptide

<400> 63

Glu Lys Glu Lys Glu Lys Glu Lys Glu Lys Glu Lys Glu Lys Glu Lys
1   5   10   15

Glu Lys Glu Lys
            20

<210> 64

<211> 22

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic linker peptide

<400> 64

Glu Lys Glu Lys Glu Lys Glu Lys Glu Lys Glu Lys Glu Lys Glu Lys
1   5   10   15

Glu Lys Glu Lys Glu Lys
            20

<210> 65

<211> 24

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic linker peptide

<400> 65

Glu Lys Glu Lys Glu Lys Glu Lys Glu Lys Glu Lys Glu Lys Glu Lys
1   5   10   15

Glu Lys Glu Lys Glu Lys Glu Lys
            20

<210> 66

<211> 26

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic linker peptide

<400> 66

Glu Lys Glu Lys Glu Lys Glu Lys Glu Lys Glu Lys Glu Lys Glu Lys
1   5   10   15

Glu Lys Glu Lys Glu Lys Glu Lys Glu Lys
            20   25

<210> 67

<211> 28

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic linker peptide

<400> 67

Glu Lys Glu Lys Glu Lys Glu Lys Glu Lys Glu Lys Glu Lys Glu Lys
1   5   10   15

Glu Lys Glu Lys Glu Lys Glu Lys Glu Lys Glu Lys
            20   25

<210> 68

<211> 30

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic linker peptide

<400> 68

Glu Lys Glu Lys Glu Lys Glu Lys Glu Lys Glu Lys Glu Lys Glu Lys
1   5   10   15

Glu Lys Glu Lys Glu Lys Glu Lys Glu Lys Glu Lys Glu Lys
            20   25   30

<210> 69

<211> 22

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic linker peptide

<400> 69

Arg Ala Arg Asp Pro Arg Val Pro Val Ala Thr Arg Ala Arg Asp Pro
1   5   10   15

Arg Val Pro Val Ala Thr
            20

<210> 70

<211> 33

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic linker peptide

<400> 70

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Arg Ala Arg Asp Pro Arg Val Pro Val Ala Thr Arg Ala Arg Asp Pro
1   5   10   15

Arg Val Pro Val Ala Thr Arg Ala Arg Asp Pro Arg Val Pro Val Ala
            20   25   30

Thr

<210> 71

<211> 44

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic linker peptide

<400> 71

Arg Ala Arg Asp Pro Arg Val Pro Val Ala Thr Arg Ala Arg Asp Pro
1   5   10   15

Arg Val Pro Val Ala Thr Arg Ala Arg Asp Pro Arg Val Pro Val Ala
            20   25   30

Thr Arg Ala Arg Asp Pro Arg Val Pro Val Ala Thr
        35   40

<210> 72

<211> 55

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic linker peptide

<400> 72

Arg Ala Arg Asp Pro Arg Val Pro Val Ala Thr Arg Ala Arg Asp Pro
1   5   10   15

Arg Val Pro Val Ala Thr Arg Ala Arg Asp Pro Arg Val Pro Val Ala
            20   25   30

Thr Arg Ala Arg Asp Pro Arg Val Pro Val Ala Thr Arg Ala Arg Asp
      35   40   45

Pro Arg Val Pro Val Ala Thr
    50   55